

Its extent and character can only be surmised at present.

Where the sun is vertically overhead the air is rising, and though these are calm regions at the surface they are certainly turbulent areas in the flight zone. However, though heat bumps on a large scale may be apparent, they have not much significance for a modern plane and can be avoided by high flying.

The most violent storms of the Tropics are the occasional hurricanes. Luckily these are confined to the oceans and rarely cause much damage far inland. They are prevalent in summer in the regions indicated, but aeroplanes flying overland will not often be dangerously affected. This is an unknown field of research, but one which it is disastrous to postpone much longer.

The southern portion of Australia is dominated by anticyclones at the surface, and by the westerly drift above. Here we are on more familiar ground. The anticyclones are surrounded by variable winds, gen-

erally unimportant from the present point of view. They have clear skies and afford good flying weather. The aviator will be interested in the more intense LOWS (or cyclones) which periodically travel across southern Australia, but they are regularly forecast and should not catch him unprepared for their clouds, rain, and strong winds.

I began this article with a quotation and will conclude with one. Lieut. Col. O'Gorman, in the last Wilbur Wright Memorial lecture, stated:

Commercial aeronautics is bound up with using the [special] values which accrue incidentally to the employment of aircraft. I take three of these: (A) Speed of transit, (B) Directness of route, (C) The utilization of helpful winds and evading bad weather.

Much more might be written on this topic, but it is hoped that the reader will now realize how intimate is the connection between meteorology and aviation, and also how much remains to be done in a scientific preparation for the forthcoming aerial traffic.

REPORT OF THE BRITISH CIVIL AERIAL TRANSPORT COMMITTEE.¹

[Review by W. R. GREGG.]

Under this heading has recently appeared the most complete and comprehensive discussion of the civil and commercial possibilities of aviation that has yet been published in any country. The committee, which is a large one, was appointed May 22, 1917, other members being added on subsequent dates. The list includes such well-known meteorologists as Sir Napier Shaw, Col. H. G. Lyons, and Maj. G. I. Taylor. The purpose of the committee was to consider and report with regard to:

1. The steps which should be taken with a view to the development and regulation after the war of aviation for civil and commercial purposes from a domestic, and imperial, and an international standpoint.
2. The extent to which it will be possible to utilize for the above purpose the trained personnel and the aircraft which the conclusion of peace may leave surplus to the requirements of the Naval and Military Air Services of the United Kingdom and Overseas Dominions.

In order to make the investigation as thorough and authoritative as possible, five special committees were formed, and they considered and rendered reports covering the following subjects:

1. Questions of law and policy.
2. Technical and practical questions as to the possibilities of performance of aircraft and as to the requirements of aerial services.
3. Business questions relating to the position of the aircraft manufacturing industry after the war, the probabilities of the establishment of aerial transport services and the steps which would be necessary for the maintenance of this industry and for the development of these services.
4. Questions of labor arising in the aircraft manufacturing industry and in aerial transport services.
5. Problems of scientific research and the special education of expert designers, engineers, and pilots.

The report of Special Committee No. 5, and the comments thereon by the Main Committee, are of special interest to meteorologists. Memoranda from Sir Napier Shaw, Col. Lyons, and Maj. Taylor set forth in some detail the character of the investigations that are being regularly conducted by the Meteorological Office and point out the need of development and enlargement along certain lines, in order to furnish aviators with reliable information as to conditions along any selected

course. After considering the recommendations contained in these memoranda, the Special Committee calls attention to the following points:

The necessity for a closer study of atmospheric conditions at great heights.

The investigation of the phenomena of mist and fog and abnormal air currents in special localities.

The necessity for an organized scheme for improving the supply of information from the meteorologist to the flier and vice versa.

The desirability of preparing meteorological information in a form most suitable for aviators from the existing material, not only for the United Kingdom, but for so much of Europe and for such air routes as may be selected.

The necessity for increased facilities for aeronautical research at the Meteorological Office.

The necessity for local meteorological establishments at appropriate terminal aerodromes, connected by telephone with the Meteorological Office and with each other.

The necessity for instituting meteorological research centers in connection with universities and other centers of education.

The necessity for the issue of suitable handbooks for the purpose of instructing fliers in meteorology.

Truly, the carrying out of these projects is an ambitious program, but it is one that can and should be undertaken and developed, not only in England, but in the United States and other countries as well.

Particularly timely are the portions of the report dealing with trans-Atlantic flight. No definite conclusion is reached as to which route is preferable, but, so far as the Newfoundland fogs are concerned, it is pointed out by Maj. Taylor that these are low in altitude and do not extend far inland. Statements confirming this conclusion are quoted from correspondence with Sir E. Morris and Mr. H. C. Thomson, whose experience of several years in Newfoundland leads them to assert that no difficulty should be encountered in locating a landing field a short distance from the coast that would be practically free from fog.

Other parts of the Reports of Special Committees and of the Main Committee, though of less interest to the meteorologist, contain much valuable information and suggestion to the aviator and will well repay careful reading and study.

¹ Published by his majesty's stationery office, London, 1918. Certain portions of a confidential or secret nature were not included.